

Appln. No. 10/600,211
Amendment dated May 23, 2006
Reply to Office Action of February 24, 2006

Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A non-aqueous electrolyte for use in rechargeable Li-ion batteries comprising a solution of a lithium salt in a non-aqueous organic solvent containing a Lewis base additive selected from a phosphine of the group consisting of triphenylphosphine (TPP) and tributylphosphine (TBP) and a nitrogen-phosphorus bonded compound of the group consisting of hexamethoxycyclotriphosphazene ($[N=P(OCH_3)_2]_3$) (HMOPA), hexamethylphosphoramide (HMPA) and N-phenyl-P,P,P-trimethylphosphorimidate (PhTMI) as well as mixtures thereof.

2-5. (canceled)

6. (currently amended) A non-aqueous electrolyte according to claim ~~2~~ 1 wherein said lithium salt is selected from the group consisting of lithium hexafluorophosphate ($LiPF_6$), lithium hexafluoroarsenate ($LiAsF_6$) and lithium tetrafluoroborate ($LiBF_4$) as well as mixtures thereof.

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7. (original) A non-aqueous electrolyte according to claim 6 wherein said lithium salt is lithium hexafluorophosphate (LiPF_6).

8. (currently amended) A non-aqueous electrolyte according to claim ~~2~~ 1 wherein said organic solvent is selected from the group consisting of organic carbonates, esters, ethers, glymes, organic nitriles, and sulfones as well as mixtures thereof.

9. (original) A non-aqueous electrolyte according to claim 8 wherein said organic solvent is a cyclic organic carbonate selected from the group consisting of ethylene carbonate (EC), propylene carbonate (PC), triethylene carbonate (TEC), and isobutylene carbonate (IBC) as well as mixtures thereof.

10. (original) A non-aqueous electrolyte according to claim 9 wherein said organic solvent is ethylene carbonate.

11. (original) A non-aqueous electrolyte according to claim 8 wherein said organic solvent is an acyclic organic .

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carbonate selected from the group consisting of dimethyl carbonate (DMC), diethyl carbonate (DEC) and ethylmethyl carbonate (EMC) as well as mixtures thereof.

12. (original) A non-aqueous electrolyte according to claim 8 wherein said organic solvent is a compound of the general formula ROCOOR^1 , where R and R^1 are the same or different alkyl groups.

13. (original) A non-aqueous electrolyte according to claim 8 wherein said organic solvent is a mixture of the cyclic organic carbonate ethylene carbonate (EC) and one or more acyclic organic carbonates selected from the group consisting of dimethyl carbonate (DMC), diethyl carbonate (DEC), ethylmethyl carbonate (EMC), as well as compounds of the general formula ROCOOR^1 , where R and R^1 are the same or different alkyl groups, and mixtures thereof.

14. (currently amended) A non-aqueous electrolyte ~~of~~ according to claim 4 1 wherein the said non-aqueous solvent is a mixture of the cyclic organic carbonates selected from the group consisting of ethylene carbonate (EC), propylene carbonate (PC),

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triethylene carbonate (TEC) and isobutylene carbonate (IBC) and one or more acyclic carbonates selected from the group consisting of dimethyl carbonate (DMC), diethyl carbonate (DEC), ethylmethyl carbonate (EMC), as well as compounds of the general formula ROCOOR^1 , where R and R^1 are the same or different alkyl groups and mixtures thereof.

15. (currently amended) An electric current producing rechargeable Li-ion cell comprising an anode; a cathode; and a non-aqueous electrolyte comprising a solution of a lithium salt in a non-aqueous organic solvent containing a Lewis base additive selected from a phosphine of the group consisting of triphenylphosphine (TPP) and tributylphosphine (TBP) and a nitrogen-phosphorus bonded compound of the group consisting of hexamethoxycyclotriphosphazene ($[\text{N}=\text{P}(\text{OCH}_3)_2]_3$) (HMOPA), hexamethylphosphoramide (HMPA) and N-phenyl-P,P,P-trimethylphosphorimidate (PhTMI) as well as mixtures thereof.

16-19. (canceled)

20. (currently amended) An electric current producing Li-ion cell according to claim ~~16~~ 15 wherein ~~the~~ said anode

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consists of a lithium intercalating compound.

21. (currently amended) An electric current producing Li-ion cell according to claim 20 wherein ~~the~~ said lithium intercalating compound is a carbonaceous material.

22. (currently amended) An electric current producing Li-ion cell according to claim ~~16~~ 15 wherein ~~the~~ said cathode is a lithium intercalating transition metal compound.

23. (original) An electric current producing Li-ion cell according to claim 22 wherein said lithium intercalating transition metal compound is selected from the group consisting of LiCoO_2 ; LiNiO_2 ; $\text{LiNi}_{1-x}\text{Co}_x\text{O}_2$ where x is $0.3 < x < 1.0$; LiMn_2O_4 ; LiV_2O_5 ; $\text{LiM}_x\text{N}_{1-x}\text{O}_2$, where M and N are transition metals and x has a value between zero and one; LiFePO_4 ; LiCrS_2 ; and LiVS_2 .

24. (currently amended) An electric current producing Li-ion cell according to claim ~~16~~ 15 wherein said lithium salt is selected from the group consisting of lithium hexafluorophosphate (LiPF_6), lithium hexafluoroarsenate (LiAsF_6) and lithium tetrafluoroborate (LiBF_4) as well as mixtures thereof.

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25. (currently amended) An electric current producing ~~cell~~ Li-ion cell according to claim ~~16~~ 15 wherein said organic solvent is selected from the group consisting of organic carbonates, esters, ethers, glymes, organic nitriles and sulfones as well as mixtures thereof.